

START

BHI- 00242
REV: 00
OU: 200-UP-1
TSD: N/A
ERA: N/A

APPROVAL PAGE

Title of Document: Site Specific Health & Safety Plan
200-UP-1 Groundwater Well Drilling

Author(s): Bruce G. Tuttle

Concurrence: R. J. Fabre'
200 Area Projects Field Support Services Lead

Russell J. Fabre 2-3-95
Signature Date

C. D. Wittreich
200-UP-1 Team Lead

C. D. Wittreich 2/8/95
Signature Date

C. H. St John,
200 Area Health & Safety Lead

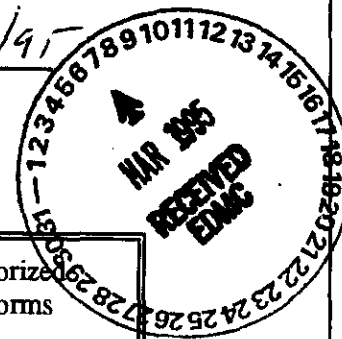
C. H. St John 2/3/95
Signature Date

Approval: J. G. Zoghbi
200 Areas Projects Manager

J. G. Zoghbi 2/8/95
Signature Date

The approval signatures on this page indicate that this document has been authorized for information release to the public through appropriate channels. No other forms or signatures are required to document this information release.

In some cases, for documents in process or previously issued with a WHC document number before July 1, 1994, this page will appear in documents identified with WHC document numbers. No other forms are required for these documents.



SITE SPECIFIC HEALTH AND SAFETY PLAN

Project Name/Description/Requested By: 200-UP-1 Well Drilling, requested by J. M. Jimenez. This project consists of field activities associated with the construction of five groundwater monitoring wells. These wells are being constructed to characterize the vertical and horizontal extent of groundwater contamination plumes in the S-plant area. The wells will be drilled using Bechtel Hanford Inc. (BHI) drilling subcontractors. It is likely the drilling will be done with cable tool and/or rotary-sonic drill rigs. Also, more than one drilling subcontractor may be used.

Location:

☐ 100 ☐ 300 ☐ 600 ☐ 1100
☒ 200 ☐ 400 ☐ 700 ☐ 3000

Facility Name/Number: 200-UP-1 Operable Unit. Well #'s UP1-9 through UP-13.

Objective of Project:

<input type="checkbox"/> ERA	<input type="checkbox"/> Drum Sampling	<input checked="" type="checkbox"/> Drilling
<input checked="" type="checkbox"/> RIFS Characterization	<input type="checkbox"/> Sampling Soils	<input type="checkbox"/> UST Removal
<input type="checkbox"/> RCRA	<input type="checkbox"/> Soil Removal	<input type="checkbox"/>
<input type="checkbox"/> Scoping Study	<input type="checkbox"/> Soil Gas Sampling	<input type="checkbox"/>
<input type="checkbox"/> Reconnaissance	<input type="checkbox"/> Remediation	<input type="checkbox"/>
<input type="checkbox"/> Spill Response	<input type="checkbox"/> GW Sample	<input type="checkbox"/>

Site Description/Disposal Practices: All work areas will be level, graded, and stabilized with gravel. Two of the five well pads are surrounded by sage brush. Minimum roadways will be established to allow access to well sites.

The primary chemical contaminants of concern in the groundwater are 1,2-Dichloroethane, 1,1-Dichloroethylene, Chromium (VI), Carbon Tetrachloride, Trichloroethylene. The concentrations of these compounds in the groundwater are generally in trace amounts. These contaminants whether considered individually or collectively should pose no significant exposure risk to site workers. The primary radiological contaminants/indicator parameters of concern are I-129, Sr-90, Tc-99, and Gross Alpha/Beta. These are also in low enough concentrations so as to pose minimal risk to site workers.

Contamination in the groundwater has resulted from past operations of nearby facilities where liquid wastes were discharged to various cribs, tanks, ditches, and ponds. The majority of these waste management units no longer receive discharges.

Note: This safety plan will govern site activities concerning site control, monitoring/action levels, minimum PPE, training, emergency controls, and decontamination. The drilling subcontractor will follow their own safety program and procedures relative to operating drilling equipment. This may include Job Safety Analysis or company safety manual requirements for drilling safety. As a minimum, the subcontractor must provide a fall protection work plan, lock and tag controls for equipment maintenance, and documented weekly safety inspections of all drilling and associated equipment. All equipment must meet applicable WISHA and OSHA standards as well as any other requirements called out in contractual documents and be inspected by the subcontractor in the presence of an ERC Safety Representative prior to the start of drilling on each well. The subcontractor must provide the name and phone number of their company safety representative.

**SITE SPECIFIC HEALTH AND SAFETY PLAN
KEY PERSONNEL, JOB TITLE, AND TRAINING REQUIREMENTS**

Job Title and/or Name	Training Requirements	Misc. Information
Drilling Superintendent - Joe Jiminez	A through I	
Site Safety Specialist (SSS) - Bruce Tuttle	A through I	
Driller/Helper/Misc. Support Personnel (subcontractor)	A through G, I for Driller/Helper	
Geologist/Sampler	A through G	
Radiation Control Technologist	A through G	
Visitor	F & J	
Note: A visitor is any person visiting the site who does not have daily responsibilities in the Controlled Zone.		

List the letter(s) of training requirements (classes) required for individuals(s) named above.

- | | | |
|-------------------------|---------------------------------|----|
| A. 40 Hr Haz. Waste | G. Rad Worker I for UP1-9,10,11 | M. |
| B. 8 Hr. Ref./3 Day OJT | H. 8 Hr. Supervisor | N. |
| C. Mask Fit if ARP Worn | I. First Aid/CPR | O. |
| D. Haz. Waste Med. Exam | J. Escort in Controlled Zone | P. |
| E. Hearing Conservation | K. | Q. |
| F. Briefing on SSP | L. | R. |

SITE SPECIFIC HEALTH AND SAFETY PLAN **WASTE TYPES, WASTE CHARACTERISTICS, AND HAZARD CONCERNS**

Waste Types: ☒ Liquid ☒ Solid ☒ Gas ☐ Unknown ☐ Other Specify:

Waste Characteristics:

<input checked="" type="checkbox"/> Chemical	<input type="checkbox"/> Biological	<input type="checkbox"/> Radioactive (No RWP)
<input type="checkbox"/> Corrosive	<input type="checkbox"/> Flammable	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Toxic	<input checked="" type="checkbox"/> Volatile	<input type="checkbox"/> Other <i>specify</i> :
<input type="checkbox"/> Inert	<input type="checkbox"/> Reactive	<input type="checkbox"/>

Hazards of Concern:

<input checked="" type="checkbox"/> Temperature Extremes	<input checked="" type="checkbox"/> Noise	<input type="checkbox"/>
<input checked="" type="checkbox"/> Fire Hazards	<input checked="" type="checkbox"/> Electrical	<input type="checkbox"/>
<input checked="" type="checkbox"/> Welding & Cutting	<input checked="" type="checkbox"/> Lifting	<input type="checkbox"/>
<input checked="" type="checkbox"/> Remote Work Area	<input checked="" type="checkbox"/> Sanitation	<input type="checkbox"/>
<input checked="" type="checkbox"/> Hazard Communications	<input checked="" type="checkbox"/> Permits	<input type="checkbox"/>
<input checked="" type="checkbox"/> Pinch Points	<input checked="" type="checkbox"/> Heavy Equipment	<input type="checkbox"/>
<input checked="" type="checkbox"/> Overhead Hazards	<input checked="" type="checkbox"/> Walking/Working Surfaces	<input type="checkbox"/>

OVERALL HAZARD CLASSIFICATION: ☐ High ☐ Medium ☒ Low ☐ Negligible ☐ Unknown

JUSTIFICATION: Contamination levels in the groundwater (both chemical and radiological) are low PPB & pCi/L and will not present any special health hazards provided minimal precautions are taken.

SITE SPECIFIC HEALTH AND SAFETY PLAN CHECK LIST

TEMPERATURE EXTREMES Adjust work/rest regimen to WBGT. Minimize/maximize clothing where possible. Drink cool/warm liquids as appropriate. Discuss signs/symptoms of heat/cold stress.	HEAVY EQUIPMENT/MACHINERY Emergency kill switch in place/tested regularly. Safety features/devices in place and functioning. Warning signs in place where required. Proper rigging used/inspected regularly. Equipment operating manual on site. Regular inspections of equipment	REMOTE WORK AREA Know your location. Communication available - phone/radio. First aid kit and trained personnel available. Know emergency numbers. Buddy system in place for driller & helper.
PERMITS — Confined Space Permit. <input checked="" type="checkbox"/> Hot Work Permit. <input checked="" type="checkbox"/> Fall Protection Work Plan. — Radiation Work Permit. <input checked="" type="checkbox"/> Excavation Permit. NOTE: Assure that all necessary permits are obtained prior to initiation of work.		HAZARD COMMUNICATIONS MSDS available for chemicals used. Containers labeled. Workers apprised of new chemical hazards.
PINCH POINTS Assure guards in place. Brief site personnel on location of potential pinch points. Identify or post areas where guarding is not appropriate or feasible.	ELECTRICAL GFCI in outdoor/wet locations. Grounding of equipment. Tools and cords in good condition, inspected before use Cords protected. Exposed wiring guarded or covered.	NOISE Hearing protection worn. Signs posted. Hearing conservation training.
WALKING/WORKING SURFACES Carry out daily housekeeping efforts. Keep walkways/work areas clear. Designate walkways/routes where appropriate. Flag or post problem areas where necessary.	SANITATION Portable toilets on site. Potable water/cups. Wash water and soap. Eating/smoking in designated areas only. Empty trash and waste food receptacles daily.	LIFTING Use proper lifting techniques. Forklift operators trained. Use buddy system for awkward/heavy loads. Use mechanical lifting devices as appropriate.
OVERHEAD HAZARDS Never go under a suspended load at any time. Use tag lines to handle loads. Secure loose objects in mast overhead. Wear head protection when required. Post head protection areas.	FIRE HAZARDS Flammable liquids stored properly. Combustible materials accumulation controlled. Heaters approved type/installed properly. Fire extinguishers in place/inspected. Ignition sources eliminated or protected.	OTHER - Welding & Cutting Combustibles/flammables relocated or protected. Fire watch throughout and 30 min. after. Borehole checked with CGI when required by SSS. Fire extinguisher available/operable. Welding/cutting equipment in good cond. Check valves on cutting torch.

SITE SPECIFIC HEALTH AND SAFETY PLAN

KNOWN CONTAMINANTS

KNOWN CONTAMINANTS	PEL/TLV (ppm or mg/m ³)	IDLH (ppm or mg/m ³)	WARNING PROPERTIES/CONCENTRATION (ppm or mg/m ³)	1. TARGET ORGANS 2. EXPOSURE SYMPTOMS	IMMEDIATE FIRST AID MEASURES
Carbon Tetrachloride	5 ppm, 10 ppm STEL	300 ppm	80 to 90 ppm, A	1. L, CNS, K, LS, S/A, E 2. CD, N, V, I, CA	IrW, FA, MA, IS
Trichloroethylene	50 ppm, 100 ppm STEL	1000 ppm	20 ppm, A	1. R, L, K, CNS, S/A 2. H, N, V, I, CA	IrW, FA, MA, IS
1,2-Dichloroethane	10 ppm, STEL 2 ppm	1000 ppm	3 ppm, A	1. K, L, S/A, E 2. CD, N, V, I CA	IrW, FA, MA, IS
1,1-Dichloroethylene	5 ppm	NA	50 ppm, A	1. K, other info. not available 2. N, other info. not available	IrW, FA, MA, IS
Chromium (VI)	Ceiling 0.05 mg/m ³	30 mg/m ³	Irritant to skin, eyes	1. H, R, L, K, S/A, CA 2. I	IrW, FA, MA, IS

NA = Not Available
U = Unknown
NE = Non Established
N/A = Not Applicable

WARNING PROPERTIES

A = Odor
B = Visual
C = Irritant

TARGET ORGANS

L = Liver
K = Kidney
LS = Lungs
E = Eyes
S/A = Skin Absorption
CNS = Central Nervous System
R = Respiratory System
CA = Carcinogen
H = Hemopoietic (Blood)
O = Other

EXPOSURE SYMPTOMS

D = Dizziness
I = Skin/Eye/Respiratory Irritant
C = Confusion
F = Fatigue
H = Headache
CD = CNS Depression
N = Nausea
W = Weakness
V = Vomiting
O = Other

1ST AID MEASURES

IrW = Irrigate with (H₂O)
FA = Get to Fresh Air
MA = Medical Aid
IS = Wash with Soap and Water

SITE SPECIFIC HEALTH AND SAFETY PLAN
MONITORING STRATEGY/ACTION LEVELS

Instrument	Frequency of Use	Action Level	Specific Actions
A	1	4	6
F	2	5	7
C	Prior to welding/cutting over well (when within 10' of GW & as site experience dictates).	Between 10 and 20% LEL in the borehole.	Correct condition through air circulation, well packer, or other methods.
			1

Where appropriate list the letter or number corresponding to the instrument or monitoring frequency in spaces above.

- | | | |
|---------------------------------|--|--|
| A. PID | H. Radiation Surveys see RWP No. <u>no RWP</u> | 1. AM/PM check daily during drilling. |
| B. FID | I. Monitoring Not Required | 2. As determined by SSS. |
| C. CGI/LEL O ₂ | J. Personal Exposure Monitoring (HEHF) | 3. Continuous. |
| D. Detector Tubes | K. Biological Monitoring | 4. 10 ppm in well (6 inches from collar). |
| E. Dust Monitor | L. | 5. Any ppm reading in breathing zone for 1 minute. |
| F. Chlorinated Hydrocarbon Det. | M. | 6. Stop work/move up wind/call SSO. |
| G. GC | N. | 7. Determine need for upgrading PPE. |
| | | 8. |

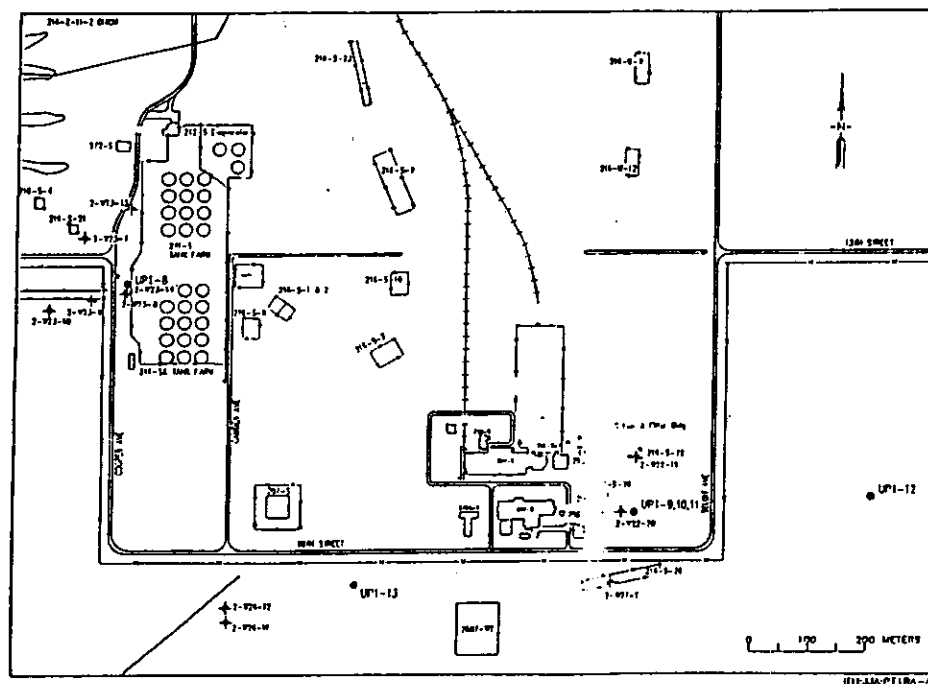
**SITE SPECIFIC SAFETY HEALTH AND SAFETY PLAN
PERSONAL PROTECTIVE EQUIPMENT**

Job Task	Work Zone/Location	PPE Level
1 through 4	8	Level "D", work clothes may be worn in lieu of coveralls.
5	8	Level "D", splash protection as required by SSS.
6	8	Level "D", HEPA Full Face Air Purifying Respirator.
		Note: Gloves only need be worn by workers handling tools and equipment.
<p>List the letter or number corresponding to the requirement in the appropriate space above or fill in pertinent information. Line out items not necessary in PPE levels.</p> <p>1. Drilling/Sampling 2. Decontamination 3. Observation 4. Monitoring 5. When splash hazard exists 6. Handling silica products</p> <p>7. Control Zone 9. Support Zone</p>		<p>Level "D" Coveralls Hard Hat Leather Gloves Hearing Protection Eye Protection Steel Toed Shoes</p>
		<p>Level "C" APR with <u>HEPA</u> cartridge plus level "D" above</p>
		<p>Level "B" Airline respirator Chemical resistant coveralls _____</p>

SITE SPECIFIC SAFETY HEALTH AND SAFETY PLAN **SITE ACCESS AND WORK ZONES**

1. Support Zone - The support zone is that area outside of the control zone for support equipment.
2. Contamination Reduction Zone - The CRZ will be that area designated within the control zone for decontamination of tools and equipment. This area will be administratively controlled and will not require special signs or ropes. There should be little if any personnel decontamination aside from washing hands before eating.
3. Control Zone - The control zone is that area around the drilling rig and associated equipment. The control zone is that area where contamination could be present. This area is designated by signs and roped off with access points. Eating, drinking, smoking, chewing, etc. will not be allowed in this zone.

SITE MAP



SITE SPECIFIC HEALTH AND SAFETY PLAN DECONTAMINATION PROCEDURES

Personnel Decontamination	Drilling and Sampling Equipment Decontamination	Heavy Equipment Decontamination
Personnel decontamination will consist of washing hands prior to eating lunch and before leaving the site. Other site conditions may indicate a need for more intensive decontamination the SSS will make this call.	Decontamination of drilling equipment, tools, and sampling equipment will be carried out in accordance with BHI-EE-01, Vol. 2, EIP 6.2. The Drilling Superintendent will control this activity.	N/A

EQUIPMENT REQUIREMENTS CHECKLIST (Underline required items or add others)

- | | | | |
|-----------------------------|------------------------------------|-----|-----|
| 1. <u>First Aid Kit</u> | 6. <u>Signs</u> (PPE, Zones, Etc.) | 11. | 16. |
| 2. <u>PPE</u> | 7. <u>Decon Equipment</u> | 12. | 17. |
| 3. <u>Fire Extinguisher</u> | 8. <u>Radio/Phone</u> | 13. | 18. |
| 4. <u>Wind Indicator</u> | 9. Breathing Air | 14. | 19. |
| 5. <u>Eye Wash</u> | 10. Signal Device | 15. | 20. |

SITE SPECIFIC HEALTH AND SAFETY PLAN **EMERGENCY PROCEDURES**

CONTINGENCY PLANS

NOTE: The Drilling Superintendent (DS) or delegate is in charge during all emergencies. The SSS may assist the DS as appropriate during an emergency. In all cases follow the BHI Event Notification Posting.

Fire - Call 811 on cellular phone. Attempt to put out fire if safe to do so. Otherwise move up wind of fire and smoke and wait for Fire Dept.

Personal Injury - Call 811, administer first aid, take injured to medical aid station if injury is not serious in the judgement of the first aider.

Chemical Exposure - Get person to fresh air, call 811 if necessary, administer appropriate first aid, take person to medical aid station if not serious in the judgement of the first aider.

| EMERGENCY CONTACTS | NAME | PHONE | |---------------------------------|----------------|---------------------------------------| | All Emergencies | | | | Fire & Patrol- | N/A | 811 on cellular phone | | 200 Area Health & Safety Lead - | Cliff St. John | 376-5459 or 539-2129
home 946-7205 | | Site Safety Specialist - | Bruce Tuttle | 376-1326 or 539-2128
home 627-0713 | | OU Team Lead - | Curt Wittreich | 376-1862 | | Drilling Superintendent - | Joe Jimenez | 539-2133 |

SPILL CONTROL PLAN

Contacts - Ken Gano, 373-4949 or home 783-0891.

Containment Kit Located - In field trailer at each drill site. Consists of shovel, absorbent, containers.

Other Equipment - Plastic is placed under drill rigs and other equipment where oil or fuel leaks are credible.

Actions to Take - Stop and contain spill if safe to do so.

| MEDICAL FACILITIES | LOCATION | PHONE | |---------------------------|----------|----------| | HEHF Medical Aid 200 West | 2719 WB | 373-2714 | | HEHF Medical Aid 200 East | 2719 EA | 373-2314 | | Kadlec Hospital | Richland | 946-4611 |

Assure all site personnel know the location of both medical aid stations and how to describe the location of the well site such as the nearest street name and nearest facility.

NOTE: All site personnel will be informed of all field changes.

**SITE SPECIFIC HEALTH AND SAFETY PLAN
FIELD CHANGE AUTHORIZATION**

Section to be Changed _____ Page _____

Person Requesting Change _____

Verbal Authorization by Health & Safety Manager _____

Date

Time

Description of Change _____

Justification for Change _____

Approved By _____

Health & Safety Manager

Date/Time

Field Team Briefed on Change By _____

Name

Date/Time